DIOSACCUS SP. AFF. DENTATUS (THOMPSON ET A. SCOTT) (COPEPODA, HARPACTICOIDA) FROM MACTAN ISL., THE PHILIPPINES

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DIOSACCUS SP. AFF. *DENTATUS* (THOMPSON ET A. SCOTT) (COPEPODA, HARPACTICOIDA) FROM MACTAN ISL., THE PHILIPPINES[1)]

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With Text-figures 1–3

During a short stay in the Philippines in 1979, I obtained some samples of marine and brackish-water meiobenthos. Although the examination of these samples is in process, it has been revealed that one of the samples, which was collected for a study of marine epiphytic animals, was extremely rich in harpacticoid copepods. Among them, I have found an unfamiliar harpacticoid female of the genus *Diosaccus* Boeck (Diosaccidae), whose body shape, especially its impressive appearance of thorax with dorsolateral protuberances, has strongly attracted my attention. Within the genus, such a prominent characteristic is known only for *D. dentatus* (Thompson et A. Scott, 1903) Lang, 1965, which was originally described from Ceylon under the name *Dactylophusia dentata* based upon a material obtained from washings of pearl oysters and is unique within the genus in having "dents" on the thorax. The present specimen, however, differs from the original description of *D. dentatus* in some other characters. The specimen is fully described in the present paper and compared with the description of *D. dentatus*.

Before going further, I would like to express my sincere gratitude to Professor Mayumi Yamada of Hokkaido University for reading the manuscript.

Diosaccus sp. aff. *dentatus* (Thompson et A. Scott, 1903)

(Figs. 1–3)

Material examined: An adult female collected from washings of algae sampled off Tambry beach, Mactan Isl., the Philippines (13–II–1979. Itô leg.).

Female. Body (Fig. 1 A, B) 10.5 mm long, rostrum and furcal setae excluded; integuments thick and hard, tinctured with yellowish brown, furnished with numerous minute spinules on most surface. Rostrum prominent, represented by a triangular plate clearly demarcated at base. Cephalothorax about as long as four succeeding somites combined. First three free thoracic somites protruded toward behind at

1) Contributions from the Seto Marine Biological Laboratory, No. 684.

each dorsolateral ridge; protuberances of second and third thoracic somites particularly prominent. Abdomen (Figs. 1 C, 2 A) markedly flattened dorsoventrally, tapering posteriorly. Genital double-somite very wide, about three times as wide as anal somite, clearly subdivided dorsally; three setulae occurring at each lateral extremity of genital area (Fig. 2 A); a longitudinal ridge stretched on mid ventral

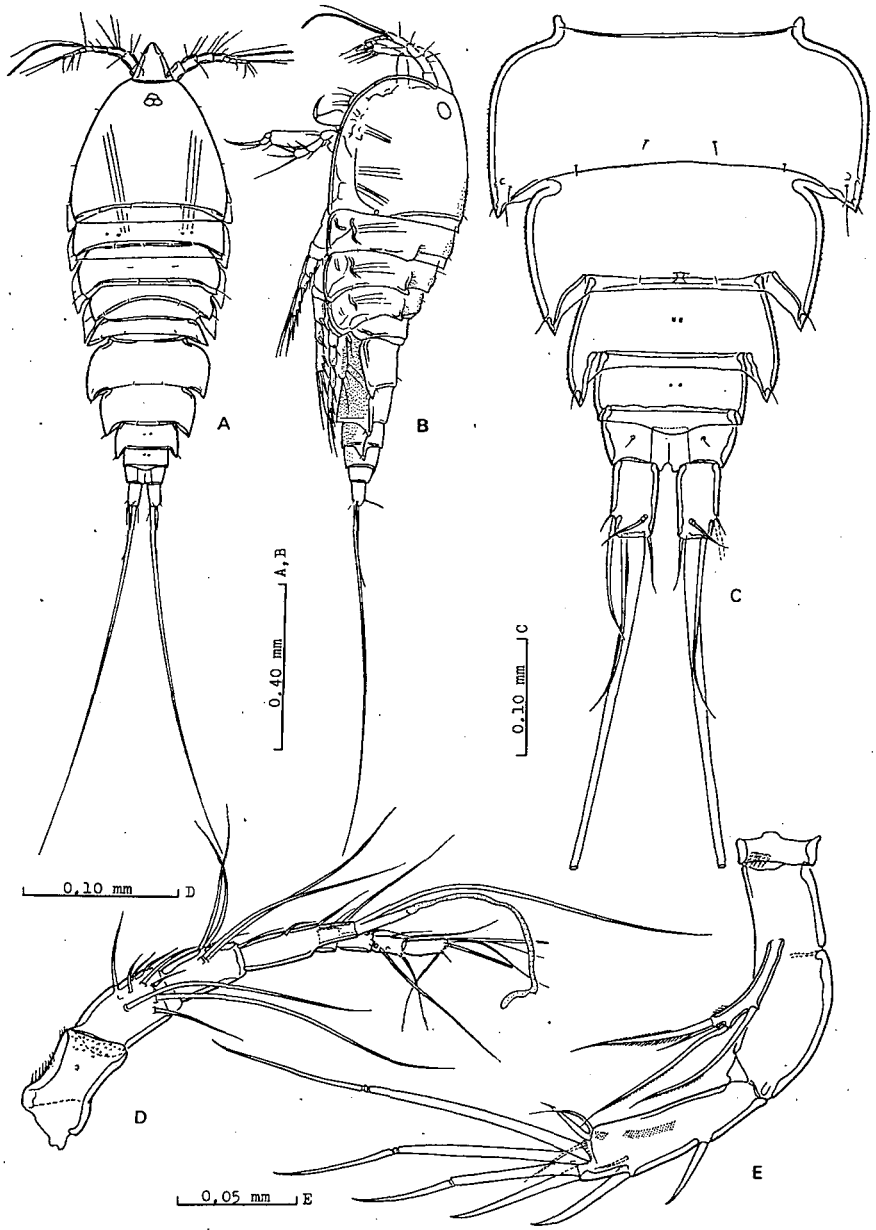

Fig. 1. *Diosaccus* sp. aff. *dentatus*. Female. A, habitus, dorsal; B, habitus, lateral; C, abdomen, dorsal; D, antennule; E, antenna.

face. Each subdivision of genital double-somite and antepenultimate somite protruding posterolaterally. Posterior hyaline membrane of penultimate somite somewhat swelling out over anus. Anal somite ornamented with a pair of hairs dorsally. Furcal ramus longer than anal somite, cylindrical, about 1.5 times as long as wide, armed with two principal terminal setae; one short seta arising from inner hind edge, one basally geniculate seta on dorso-inner surface, two closely set setae, ventral one of which is dwarf, attached onto outer face. Antennule (Fig. 1 D) eight-segmented, first four segments subequal in length; first segment with spinules both

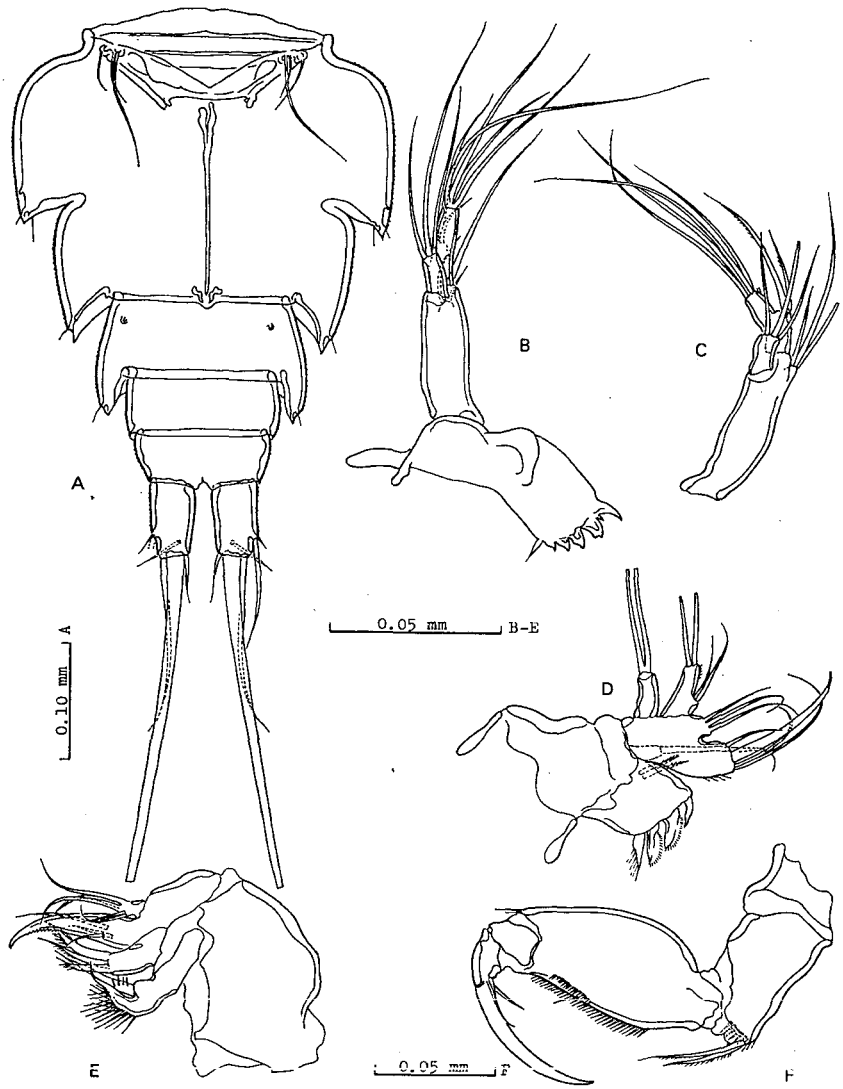

Fig. 2. *Diosaccus* sp. aff. *dentatus*. Female. A, abdomen, ventral; B, mandible; C, coxa-basis, exopodite, and endopodite of mandible; D, maxillula; E, maxilla; F, maxillipede.

anteriorly and dorsally; fourth segment armed with a long aesthetasc which arises from a conspicuous cylindrical process; apical four segments small. Antenna (Fig. 1 E). Coxa very short, with a few spinules on its inner face. Allobasis with a notch on its anterior face, without any seta. Exopodite represented by a subcylindrical segment armed with two lateral setae and two terminal setae, one of which is narrow and bare. Endopodite segment shorter than allobasis, armed with two widely spaced spines, the distal one accompanied with a setula, on its anterior face; one simple spine, three geniculate spines, one narrow seta, and one bifurcate short seta attached onto distal end. Mandible (Fig. 2 B, C). Praecoxa well sclerotized, armed with dents and a short seta along cutting edge. Coxa-basis longer than wide, armed with three setae on its inner subapical edge. Exopodite represented by a short cylindrical segment terminating in three setae. Endopodite consisting of a segment, which is longer than exopodite segment, armed with two setae on a step at the middle of inner edge and four setae on distal end. Maxillula (Fig. 2 D). Arthrite of praecoxa armed with three (?) short spines and one spinulose seta along inner edge, two parallel setae on anterior face. Coxa armed with a seta which arises from an inner process. Basis well developed, bilobular; dorsal lobule armed with one spine and three narrow setae; ventral lobule with three narrow setae. Exopodite represented by a cylindrical segment armed with two juxtaposed terminal setae. Endopodite segment as long as exopodite segment, armed with two setae on a stepped inner edge and two setae on distal end. Maxilla (Fig. 2 E). Syncoxa with two endites; first (dorsal) endite armed with two setae, one of which is very thick and markedly spinulose; second endite with three apical setae. Basis forming a strong claw accompanied with three setae. Endopodite represented by a rudimentary segment with five setae. Maxillipede (Fig. 2 F). Coxa short, bare. Basis armed with two finely spinulose setae on inner distal angle. First endopodite segment about 1.5 times as long as basis, furnished with a setula and spinules along inner margin. Second endopodite segment short, armed with a strong arched claw accompanied with two setae near its base.

Leg 1 (Fig. 3 A). Coxa broad, furnished with spinules on anterior surface and outer margin. Basis armed with a finely spinulose outer spine and a thick inner spine. Both rami three-segmented. Exopodite: first segment with an almost naked outer spine; second segment about twice as long as third segment, furnished with long hairs along inner margin, an arched outer spine and a short hairy inner seta; third segment armed with two strong arched spines, and two long spines which are geniculate medially. Endopodite: first segment a little longer than three exopodite segments combined, about three times as long as wide, furnished with long hairs along its inner margin, and with a short plumose seta at inner distal angle; second segment with a small seta on its inner distal angle; third segment apically with one strong arched claw, which is about four times as long as this segment, one short medially geniculate spine, and a small seta. Leg 2 (Fig. 3 B). Intercoxal plate bare. Coxa wider than long, with a few rows of spinules on its anterior surface. Basis furnished with two prominent projections, one located between both rami, the

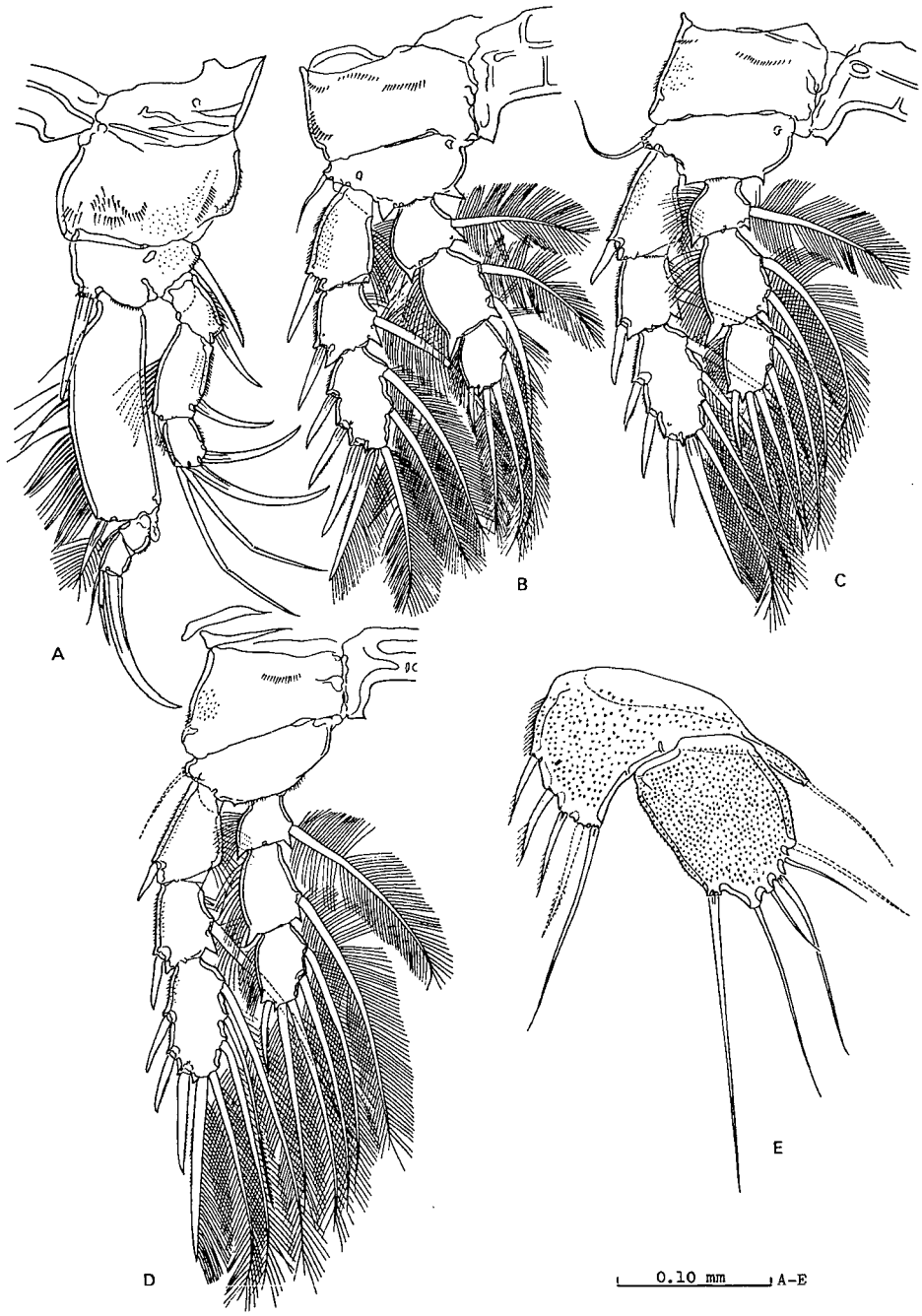

Fig. 3. *Diosaccus* sp. aff. *dentatus*. Female. A, leg 1; B, leg 2; C, leg 3; D, leg 4; E, leg 5.

other at inner distal edge; outer seta bare. Third exopodite segment with two plumose inner setae. Second endopodite segment with two inner setae. Third endopodite segment with one short outer spine, two terminal setae, and one inner seta in all. Leg 3 (Fig. 3 C). Two projections of basis not prominent. Third exopodite segment with three inner setae. Second endopodite segment with two inner setae. Third endopodite segment with one outer spine, two terminal setae, and two inner setae in all. Leg 4 (Fig. 3 D). Third exopodite segment with three inner setae, of which the middle is narrower than others and serrate, others are plumose. Second endopodite segment with one inner seta. Third endopodite segment armed as in leg 3. Leg 5 (Fig. 3 E). Inner expansion of baseoendopodite not reaching the middle of exopodite, armed with five setae, the outermost longer than others. Exopodite about 1.5 times as long as wide, armed with six bare setae; first (the innermost) seta longest, third and fifth setae narrow and short. Numerous short spinules scattered on anterior (ventral) surfaces of baseoendopodite and exopodite.

Discussion

The specimen described accords with the female of *Diosaccus dentatus* (Thompson et A. Scott, 1903) in the appearance of body, especially its thorax with posterolateral protuberances ("dents" in the sense of Thompson and A. Scott, 1903). Within the genus *Diosaccus, D. dentatus* is unique in the possession of the dents and, further, the exopodite of the female leg 5 which is armed with seven setae. Thompson and A. Scott (op. cit., Pl. IX, fig. 7) illustrated a supernumerary seta at about the middle of inner edge of the exopodite, other than a usual subapical inner seta. The exopodite of the female leg 5 of other congeneric species bears at most six setae including a subapical inner seta which is commonly present in all of the congeneric species. The antennal exopodite, on the other hand, consists of a single segment with four setae in this specimen. As far as can be seen in Thompson and Scott's figure, the antennal exopodite of *D. dentatus* consists of two segments, and bears four setae in all.

It is impossible to compare the armatures of leg 2 to leg 4 of the present specimen with those of *D. dentatus* because neither description nor illustration was given for these legs of *D. dentatus* by Thompson or A. Scott (op. cit.).

Despite of clear difference in the leg 5 and antennal exopodite as described above, I hesitate to propose another specific name for the present specimen because my material is apparently insufficient to do so and, further, a possibility that Thompson and Scott's illustrations were incorrect still remains. Although the final decision for the taxonomic situation of the present specimen is postponed, I would like to call attention to a probability of the existence of a dents-bearing 'species' which differs from the original description of *D. dentatus* in at least two major characteristics since the presence or absence of the dents on the thorax has been regarded as the most important key character to distinguish *D. dentatus* from other congeneric species

(Lang, 1948, 1965).

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